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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,775	05/23/2005	Saburo Miyabe	DN2003055	7580
<div>27280 7590 07/25/2007</div> <div>THE GOODYEAR TIRE & RUBBER COMPANY</div> <div>INTELLECTUAL PROPERTY DEPARTMENT 823</div> <div>1144 EAST MARKET STREET</div> <div>AKRON, OH 44316-0001</div>				
			EXAMINER	
			MAKI, STEVEN D	
			ART UNIT	PAPER NUMBER
			1733	
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			07/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/509,775

Applicant(s)

MIYABE ET AL.

Examiner

Steven D. Maki

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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- 1) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 2) Claims 1-3 and 5-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the subject matter of "said narrow width grooves are disposed on each side of at least one of said broad width grooves so as to form an inner rib of smaller rib width on the tire equator side and an outer rib of larger rib width on a tread grounding end side" (emphasis added). The original disclosure supports disposing narrow width grooves 6b1, 6a on each side of one broad width groove 5 so as to form an inner rib 7 of smaller width and an outer rib 8 of larger rib width. The original disclosure also supports using broad width grooves 5, 5. However, the original disclosure fails to describe using the larger width rib and smaller width rib for more than one broad width groove and therefore fails to reasonably convey "said narrow width grooves are disposed on each side of at least one of said broad width grooves so as to form an inner rib of smaller rib width on the tire equator side and an outer rib of larger rib width on a

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tread grounding end side" (emphasis added). In other words, the original disclosure fails to show that that applicant had possession of "said narrow width grooves are disposed on each side of two, three, four, etc. of said broad width groves so as to form an inner rib of smaller rib width on the tire equator side and an outer rib of larger rib width on a tread grounding end side" (emphasis added).

In claim 2, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is the subject matter of "at least one broad width groove is located further outside of the tire equator toward the tread surface outer tread edge than the narrow in the preferred mounting orientation". Claim 1 requires "said narrow width grooves are disposed on each side of at least one of said broad width groves so as to form an inner rib of smaller rib width on the tire equator side and an outer rib of larger rib width on a tread grounding end side" (emphasis added). In figure 1, narrow width grooves 6b1, 6a are disposed on each side of one broad width groove 5 so as to form an inner rib 7 of smaller width and an outer rib 8 of larger rib width. Since it is impossible for the broad width groove 5 having groove width GW2 to be located further outside the tire equator toward the tread surface outer edge than outer narrow groove 6b1, the original disclosure fails to reasonably convey the above noted subject matter of claim 2. It is suggested to cancel claim 2.

3) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4) Claims 2, 5 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, "the tread surface is configured having a preferred mounting orientation" (emphasis added) is ambiguous. One of ordinary skill in the art is not reasonably appraised of the scope of protection afforded by the above noted language. It is unclear which "configuration(s)" (in sharp contrast to mounting orientations) are required and/or excluded by the above noted language.

Claim 2 is ambiguous because there is no antecedent for "the narrow" (next to last line). It is uncertain if the next to last line of claim 2 is referring to "the narrow width grooves" or something else.

Claim 5 describes "a groove wall" but does not specify which groove(s) has the recite "groove wall". Accordingly, it is unclear which groove(s) are required by claim 5 to have the angles θ_1 and θ_2 .

Claim 9 describes "a groove wall" but does not specify which groove(s) has the recite "groove wall". Accordingly, it is unclear which groove(s) are required by claim 9 to have the angles θ_1 and θ_2 .

5) Applicant is advised that should claim 1 be found allowable, claim 2 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing

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one claim to object to the other as being a substantial duplicate of the allowed claim.

See MPEP § 706.03(k).

Claims 1 and 2, which are rejected under 112 second paragraph as set forth above, appear to have the same scope. The description relating to the intended use of the tire in claim 2 ("preferred mounting orientation") fails to create a difference in scope between claims 1 and 2. It is suggested to cancel claim 2.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Japan 110

7) **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japan 110 (JP 7-172110) in view of Europe 365 (EP 654365) and further in view of Japan 704 (JP 60-193704) or Boiocchi et al (US 2002/0139460).**

Japan 110, directed to reducing noise, discloses a pneumatic tire with a tread comprising four wide circumferential grooves 1, three narrow circumferential grooves 1, a pair of shoulder block rows and six circumferential ribs 2-7. See figure 2. The four wide circumferential grooves are illustrated as having the same width. The three narrow circumferential grooves are illustrated as having the same width. The width of the narrow grooves is illustrated as being substantially smaller than the width of the wide grooves. Japan 110 specifically teaches that the ribs 2, 3, 6 and 7 in the figure 2 embodiment are not provided with lug grooves. See paragraph 16 of machine

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translation. Japan 110 teaches that each of the ribs has a width of 4-10% of the tread ground contact width W. Japan 110 teaches that the sum of the groove widths G1-G7 is 23-30% of the tread ground contacting width W (falling within the claimed range of 15-35%). In example 1, the rib width is 7% of the tread width and the sum of groove widths is 27% of the tread width. The broad width main groove reads on either the wide groove having groove width G3 or the wide groove having groove width G5. Each wide groove is between a pair of ribs which are not interrupted by "any sipings, slots or other notches". The centerline of the groove with groove width G3 is at a distance of more than about 7% tread width since (1) groove width G3 > groove width G4 and (2) rib width L3 is 7% in example 1. The value of 7% falls within the claimed range of 5-30%.

With respect to "broad width grooves having a groove width of 4-20% of the tread grounding width", the sum of groove widths divided by seven is 3.9% tread width. Since the groove width (e.g. width G3) of the wide groove is clearly larger than the width (e.g. G4) of the narrow width groove, the groove width of the wide groove must be greater than 3.9% and as such there is a reasonable basis for concluding that the width G3 of the wide groove falls within the claimed range of 4-20% tread grounding width. In any event: it would have been obvious to one of ordinary skill in the art to provide Japan 110's tire such that the tread has broad width grooves having a groove width of 4-20%, a groove centerline of a broad width groove apart from the tire equator by a distance of 5-30%, uninterrupted ribs formed on both sides of the broad width groove, and a total of groove widths of 15-35% of the tread grounding width since (1) Japan 110 teaches a tread pattern comprising a pair of shoulder block rows, four wide circumferential

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grooves, three narrow circumferential grooves and six uninterrupted ribs (figure 2), (2) Japan 110 teaches (a) providing the ribs with a width of 4-10% of the tread grounding width and (b) using a total width of the circumferential grooves of 23-30% of the tread grounding width and (3) Europe 365, also directed to a low noise tire having wide and narrow circumferential grooves, suggests providing the wide circumferential grooves with a width of greater than 3% of the tread width (e.g. 4-5% of the tread width) and providing the narrow circumferential grooves with a width less than 1% of the tread width.

Japan 110 does not recite angle θ_1 is larger than angle θ_2 . However, it would have been obvious to one of ordinary skill in the art to provide Japan 110's "broad width main grooves" such that angle θ_1 is larger than angle θ_2 ("an inclination angle θ_1 of a groove wall on the tread grounding end side with respect to a normal line of the tread surface is larger than an inclination angle θ_2 of a groove wall on the tire equator side with respect to the normal line") since (1) Japan 704 discloses inclining the outer wall of a circumferential groove in a tire tread at an angle β (10-30 degrees) larger than the inclination angle α of the inner wall to provide drainage performance, steering stability and gripping performance when cornering or (2) Boiocchi et al suggests using a larger angle (e.g. 15 degrees) of inclination for an outer groove wall of a straight circumferential groove in a tire tread than the angle of inclination (e.g. 5 degrees) for the inner wall to improve wear resistance during cornering.

Gerresheim et al

8) **Claims 1-3, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerresheim et al (DE 19940777) in view of Europe 365 (EP 654365) and Japan 110 (JP 07-172110).**

US 6796350 to Gerresheim et al is an English language equivalent to DE 19940777 to Gerresheim et al.

Gerresheim et al discloses a vehicle tire (pneumatic tire) with a tread having an asymmetric tread pattern comprising seven circumferential grooves. The circumferential grooves include one super wide circumferential groove 4, two main circumferential grooves 5 and four narrow circumferential grooves 13. See figure 2. Gerresheim et al teaches that the super wide circumferential groove has a width of at least approximately 30 mm. As can be seen from figure 2, **the narrow circumferential grooves 13 and super wide circumferential groove 4 define a larger width outer rib having no sipes, slots or notches and a smaller width inner rib having no sipes, slots or notches.** Gerresheim et al does not specifically recite providing the broad width main grooves 4, 5, 5 with a groove width of 4-20% of the of the tread grounding width and providing the four narrow circumferential grooves with a width of less than 1% of the tread width such that the total length of groove widths of the circumferential grooves are summed corresponding to 15 to 35% of the tread grounding width.

As to claim 1, it would have been obvious to one of ordinary skill in the art to provide Gerresheim et al's broad width main grooves 4, 5, 5 with a groove width of 4-

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20% of the of the tread grounding width and provide the four narrow circumferential grooves with a width of less than 1% of the tread width (e.g. 1 mm) such that the total length of groove widths of the circumferential grooves are summed corresponding to 15 to 35% of the tread grounding width since (1) Gerresheim et al discloses a tread pattern including one super wide circumferential groove 4, two main circumferential grooves 5 and four narrow circumferential grooves 13 wherein the super wide circumferential groove has a width of at least 30 mm, (2) Europe 365, directed to a low noise tire having wide and narrow circumferential grooves, suggests providing the wide circumferential grooves with a width of greater than 3% of the tread width (e.g. 4-5% of the tread width) and providing the narrow circumferential grooves with a width less than 1% of the tread width (e.g. 1 mm) and (3) Japan 110 suggests using a total length of groove widths of circumferential grooves of 20-30% of the tread ground contact width to reduce noise without reducing wettability wherein Japan 110 discloses a tread grounding width W of 176 mm. When tread ground contact width is 176 mm, the super wide groove has a width of 30 mm, the narrow circumferential grooves have a width of 1 mm and the main grooves 5 have a width of 4% tread ground contact width, then the total length of groove widths of the circumferential groove is 27.4% of the ground contact width

$(1 \times (30/176 \text{ mm} \times 100\%) + 2 \times (4\%) + 4 \times (1 \text{ mm}/176 \text{ mm} \times 100\%))$. The total length of 27.4% falls within the claimed range of 15-35% and also falls within Japan 110's range of 23-30%. The motivation for providing Gerresheim et al's circumferential grooves with widths as discussed above includes reducing noise without reducing wettability.

Furthermore, it would have been obvious to one of ordinary skill in the art to locate the centerline of the superwide circumferential groove (having a width such as 17% of the tread ground contact width) such that it is spaced from the tire equator by 5-30% of the tread grounding width since Gerresheim et al teaches locating the superwide circumferential groove adjacent the tire equator.

As to claim 2, note the location of the superwide groove and the narrow grooves 13 disposed on both sides of the super wide groove in figure 2 of Gerresheim et al.

As to claim 3, it would have been obvious to one of ordinary skill in the art to provide the inner and outer ribs with a width of 2-6% of the tread grounding width since (1) Gerresheim et al shows the inner and outer ribs as having a width greater than the narrow grooves but less than the superwide circumferential groove and optionally (2) Japan 110 teaches using a rib width of 4-10% for ribs which like those in figure 2 of Gerresheim et al have no sipes (sipings), slots or notches.

As to claim 6, it would have been obvious to one of ordinary skill in the art to provide the lateral grooves in Gerresheim et al's tread with a width of 3-7 mm in view of Europe 365's teaching to provide lateral grooves with a width of greater than 1.5% of the tread width. With a ground contact tread width of 176 mm and a lateral groove width of 1.5%, the lateral grooves have a width of 2.6 mm (falling within the claimed range of 3 to 7 mm).

As to claim 8, Gerresheim et al's figure 2 tread pattern is a non-symmetric pattern in which circumferential grooves 4, 5, 5 have a larger width than the narrow circumferential grooves.

9) **Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gerresheim et al (DE 19940777) in view of Europe 365 (EP 654365) and Japan 110 (JP 07-172110) as applied above and further in view of Kuroda (US 20030116246), Matsumoto (US 6102094) or Travers (US 3253635).**

As to claim 7, it would have been obvious to one of ordinary skill in the art to provide Gerresheim et al's tire with a buttress region such that the buttress region is located further outside than 55% of the tread grounding width from the tire equator and further inside than 65% thereof and the buttress region is formed as a peripherally directed successive portion including *no grooves or notches extending obliquely* with respect to the tire peripheral direction in view of (1) Kuroda's suggestion to provide no concave grooves in a region Yi of a tire having improved steering stability and riding comfort when turning, (2) Matsumoto's suggestion to locate high hardness rubber 15 (instead of grooves as in figure 5b) in a region 14 of a pneumatic tire to control wandering or (2) Travers suggestion to locate decoupling grooves (but not oblique grooves) below the ground contact end in a "buttress region" of a tire to prevent excessive heating and thereby improve rolling resistance, cornering power and wear resistance.

10) **Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerresheim et al (DE 19940777) in view of Europe 365 (EP 654365) and Japan 110 (JP 07-172110) as applied above and further in view of Japan 704 (JP 60-193704) or Boiocchi et al (US 2002/0139460).**

As to claims 5 and 9, it would have been obvious to one of ordinary skill in the art to provide Gerresheim et al's "broad width main grooves" such that angle θ_1 is larger than angle θ_2 ("an inclination angle θ_1 of a groove wall on the tread grounding end side with respect to a normal line of the tread surface is larger than an inclination angle θ_2 of a groove wall on the tire equator side with respect to the normal line") since (1) Japan 704 discloses inclining the outer wall of a circumferential groove in a tire tread at an angle β (10-30 degrees) larger than the inclination angle α of the inner wall to provide drainage performance, steering stability and gripping performance when cornering or (2) Boiocchi et al suggests using a larger angle (e.g. 15 degrees) of inclination for an outer groove wall of a straight circumferential groove in a tire tread than the angle of inclination (e.g. 5 degrees) for the inner wall to improve wear resistance during cornering.

Remarks

- 11) Applicant's arguments with respect to claims 1-3 and 5-9 have been considered but are moot in view of the new ground(s) of rejection.
- 12) No claim is allowed.
- 13) Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki
July 23, 2007


STEVEN D. MAKI
PRIMARY EXAMINER
7-23-07